

REMARKS

The Applicants respectfully request entry of the above Amendment, and consideration of the application, as amended.

By the above Amendment, the Applicant amended claims 11 and 19-21, and introduced new claims 22-28. Claim 11 was also amended to address a typographical error. Claims 19-21 were amended to introduce the limitations from withdrawn claims 14-18.

Support for new claim 22 may be found in line 2 of paragraph [0010].

Support for new claim 23 may be found in lines 6-8 of paragraph [0014].

Support for new claim 24 may be found in lines 8-10 of paragraph [0014].

Support for new claim 25 may be found in lines 1-3 of paragraph [0017].

Support for new claims 26 and 27 may be found in Table lines 4 and 15.

Support for new claim 28 may be found in paragraph [0010], where U.S. patent 5,81,257 is incorporated by reference. As described in paragraph [0010], “Glass fibers for use in the electric material of the present invention is [sic] composed of twist-free...yarn, as described in U.S. Patent 5,81,257, to Burton, et al., the entire contents of which are incorporated herein by reference.” The method steps that appear in claim 28 are recited in column 3, lines 15-24 of U.S. Patent 6,581,257.

Claims 1-28 are now pending in this application. Claims 14-18 were previously withdrawn.

I Response to Obviousness Rejection Based upon Roberts and Scari

In paragraph 2 on pages 2 and 3 of the Action, the Patent Office rejected claims 1-5, 7-13, and 19-21 pursuant to 35 U.S.C. §103(a) as obvious in view of the combined teachings of U.S. Patent 4,704,322 of Roberts [herein “Roberts”] and U.S. Patent 5,792,713 of Scari, et al. [herein “Scari”]. The Applicant respectfully submits that these rejections are inappropriate and

requests that these rejections be reconsidered and withdrawn based upon the following comments and observations.

In support of their position, Patent Office's summarizes the *Graham v. Deere* factual inquiries and then applies these inquires to Roberts and Scari. However, the Applicant respectfully submits that, although the recent *KSR* ruling underscored the significance of the *Graham v. Deere* factual inquiries, the Supreme Court also emphasized that the proposed combination of prior art references "yield predictable results to one of ordinary skill in the art." [KSR 82, USPQ2d, 1385, 1295 (2007), emphasis added.] The Applicant submits that, due to the nature of the present invention and desired performance of the present invention, the present invention is not predictable to one of skill in the art from the combination of the cited references of Roberts and Scari.

A review of the invention will assist in illustrating the lack of predictability of the present invention. As recited in claim 1, one aspect of the invention is

1. An electric insulating material comprising a glass fiber layer and a mica layer disposed thereon, wherein the glass fiber layer comprises twist-free glass yarn.
[Emphasis added.]

As recited in claim 1, and discussed throughout the present application, this aspect of the invention is an "electrical insulating" material. For example, as described in paragraph 0025, the invention can be used for "a cable, wire, or conductor capable of operating at high temperatures," for instance, "for power cables, command cables, signal and control cables, high temperature cables, and fire resistant wiring and cables."

However, surprisingly, the inventors have found that the combination of a mica layer and twist-free glass fiber provide improved electrical insulating performance compared to a mica layer and non-twist free glass fiber. This improvement is illustrated in Table III of the instant application which provides comparative data showing that the dissipation factor (DF) of an aspect of the invention (under "Experimental) is markedly lower (specifically, 67.6 % lower) than prior art material (under "Control 2") having mica and a non-twist free glass fiber. The unpredictability of this result will become clearer upon review of Scari below.

The Patent Office first cites Roberts. This citation is reasonable since Roberts discloses “a resin rich, electrically insulating tape comprising a layer of mica and an electrically insulating scrim.” [Abstract]. However, as acknowledged by the Patent Office, Roberts fails to teach the use of twist-free glass yarn for a scrim. As a result, the Patent Office cites Scari for the teaching of twist-free glass yarn and proposes that “[i]t would have been obvious to one of ordinary skill in the art to substitute the zero-twist glass cloth [of Scari] for a conventional glass woven cloth [of Roberts] motivated to improve the properties of the glass-reinforced mica tape.” The Applicant respectfully submits that, contrary to the rulings in *KSR*, the present invention would not be obvious to one of ordinary skill in the art seeking to provide an improved “electrical insulating material” because improved electrical insulation is not “predictable” from what is disclosed by Scari. This will become more apparent upon a review of Scari.

As described throughout Scari, the twist-free glass fabric provided by Scari is characterized by its improved mechanical strength. In the Abstract of Scari, the fabric is characterized as a “reinforcement for paper or resinous articles.” In lines 65-67 in column 7 under the heading “Summary of the Invention,” we learn that the Scari fabric “allows greater glass content for the reinforcement which improves the mechanical and reinforcing properties of resinous impregnated articles.” At 8: 23-24, we are told that the Scari fabric “provides improvements in woven glass fabric reinforcement for paper or resinous articles.” However, contrary to the present invention, nowhere in Scari do the inventors characterize the fabric as having any electrical insulating properties. In fact, when summarizing the advantages of the invention in lines 33-67 of column 10, no electrical property benefits are mentioned. All the advantages identified are mechanical or in processing.

Moreover, at 11:1-7, Scari identifies several applications for the disclosed fabric; however, none of the applications are electrical in nature, or have any relationship to electrical insulation. Further still, in the table of fabric properties listed in column 11, not one property is related to electrical performance or electrical insulating performance.

Clearly, the Scari fabric has improved mechanical properties, but provides no teaching or suggestion to one of ordinary skill in the art that the Scari fabric has any beneficial electrical or electrical insulation properties that would make it useful in an electrical insulator.

In short, there is no teaching or suggestion in Scari that the fabric of Scari can or should be used as an “electrical insulator” with mica or with any other material. Contrary to the teachings of *KSR*, the improved electrical insulating properties provided by aspects of the invention are not predictable from the disclosure of Scari or the disclosure of Roberts and Scari.

Moreover, a casual comparison of the Scari invention shown in Figure 1B of Scari further suggests that it would not be predictable that the Scari fabric would be an effective electrical insulator. Specifically, a comparison of the thicker yarns of the prior art twisted yarn shown in Figure 1A of Scari compared to the thinner yarns of the non-twisted yarn shown in Figure 1B suggests that - lacking any discussion of electrical insulating properties in Scari whatsoever - the thinner Scari fabric is unlikely to be an effective electrical insulator. Again, the improved electrical insulating performance of aspects of the present invention are not predictable from even the figures of Scari.

Since the improved performance of aspects of the present as an electrical insulator are not predictable from the disclosures of Roberts or Scari, the Applicant respectfully submits that the invention recited in claim 1 is not obvious in view of Roberts and Scari. The Applicant requests that this rejection be reconsidered and withdrawn.

With respect to the rejections of dependent claims 2-5, 7-13, and 19-21, the Applicant submits that these claims are not obvious in view of Roberts and Scari for the same reasons that claim 1, from which they depend, is not obvious. The Applicant respectfully requests that these rejections be reconsidered and withdrawn.

II Response to Obviousness Rejection Based upon Roberts, Scari, and Andres

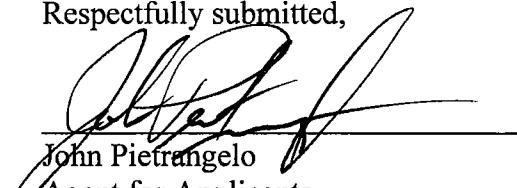
In paragraph 3 on page 4 of the Action, the Patent Office rejected claim 6 pursuant to 35 U.S.C. §103(a) as obvious in view of the combined teachings of Roberts, Scari, and U.S. Patent 4,34,153 of Andres et al. [herein “Andres”]. The Applicant respectfully submits that Andres does not address the deficiencies of Roberts and Scari, and claim 6 is non-obvious for the same reasons that claim 1, from which it depends, is non-obvious. The Applicant also requests that this rejection be reconsidered and withdrawn.

III CONCLUSION

The Applicant believes that the above Amendment and Remarks place the application in allowable form. An early and favorable action on the merits of the application is requested.

If a telephone conference would be of assistance in advancing prosecution of the subject application, the Applicant's undersigned Agent invites the Examiner to telephone him at the number provided.

Respectfully submitted,



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